

CLAIMS

1. A structural sandwich plate member comprising:
5 first and second outer metal plates;
a core of compact plastics or polymer material bonded to said outer plates
with sufficient strength to transfer shear forces therebetween; and
a plurality of relatively lightweight forms disposed within said core;
wherein said lightweight forms are made of a fire resistant insulating
10 material.
2. A structural sandwich plate member according to claim 1 wherein each of
said lightweight forms comprises a barrier impermeable to the liquid form of said
plastics or polymer material between said fire resistant insulating material and said
15 core.
3. A structural sandwich plate member according to claim 2 wherein said
barrier comprises an elongate hollow tube which is filled with said fire resistant
insulating material
20
4. A structural sandwich plate member according to claim 2 wherein said
barrier comprises a coating which has been applied to blocks of said fire resistant
insulating material by spraying or dipping.
- 25 5. A structural sandwich plate member according to claim 2 wherein said
barrier comprises a sheet material wrapped around said fire resistant insulating
material.
6. A structural sandwich plate member according to claim 5 wherein said
30 sheet material is selected from the group comprising metal foil, felt, mineral cloth

-9-

and plastics or polymer sheet materials.

7. A structural sandwich plate member according to any one of the preceding claims wherein said fire resistant insulating material comprises mineral wool.

5

8. A structural sandwich plate member according to any one of the preceding claims wherein said fire resistant insulating material has a density in the range of from 30 kg/m³ to 200 kg/m³.

10 9. A structural sandwich plate member according to any one of the preceding claims wherein said fire resistant insulating material has an ignition point and a melting point each greater than 1000°C.

10. A method of manufacturing a structural sandwich plate member
15 comprising the steps of:

providing first and second outer metal plates in a spaced-apart relationship with a plurality of lightweight forms located therebetween;

injecting uncured, unfoamed plastics or polymer material to fill the space defined between said outer plates and said lightweight forms; and

20 allowing said plastics or polymer material to cure to bond said outer plates together with sufficient strength to transfer shear forces therebetween;

wherein said lightweight forms are made of fire resistant insulating material.

25